

## THE SURGICAL TREATMENT OF CHRONIC DYSPEPSIA DUE TO DEFECTIVE DRAINAGE, AND CHRONIC INFLAMMATION OF THE STOMACH RESULTING FROM GASTRIC ATONY AND DILATATION.

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A not infrequent cause of disagreeable and long-standing dyspeptic symptoms is gastric atony followed by chronic gastritis, moderate dilatation, and defective drainage of the stomach. These conditions, when of long standing, give rise to almost continuous dyspeptic symptoms associated with secondary neurasthenia, of more or less severity, and chronic constipation. Gastro-enterostomy, with closure of the pylorus, will give these patients complete and permanent relief, not only from the stomach symptoms, but also from the neurasthenia and constipation.

I do not accept the foregoing statements as conclusive; neither am I able to present proof that will be convincing to all; but I do believe that, if we bear these statements in mind, we shall occasionally find a chronic sufferer whose condition corresponds to them, and who can be completely and permanently relieved only by surgical interference.

It is generally admitted that fatigue of the gastric muscle, followed by gastric atony, elongation of the gastric muscle fibres, and consequently enlargement of the stomach cavity, does occur. Turck,<sup>1</sup> Kemp,<sup>2</sup> Rose, and others have discussed the occurrence of the loss of tone of the gastric muscle in detail. When the condition is only of temporary duration, its importance is overlooked; and in these cases, special attention has been given to the secretory derangements of the organ as a cause of the symptoms. When the muscle tonus of the stom-

ach is lost for a considerable period of time, chemical treatment does not relieve the symptoms. This fact has led observers to study disturbances of the motor functions of the stomach and to pay less attention to secretory derangements and chemical treatment. Mayo<sup>3</sup> says that "it is the mechanics of the stomach that is usually at fault and not its chemics; and it is for this reason that surgery is rapidly invading the field." Of course, secretory disturbances of the stomach occur, associated with motor disorders, and independently of them; but they are doubtless of secondary importance in producing symptoms. In fact, Einhorn has shown that even achylia gastrica can occur, and produce no symptoms if the motor function of the stomach is not impaired.

If we attribute the symptoms of some cases of chronic dyspepsia to primary muscular atony and insufficiency, the succession of changes in these long-standing cases would seem to me to be the following:

The continuous atony of the stomach musculature results in incomplete emptying, or deficient drainage, of the organ, either from a resulting pouch formation, or from lack of muscular force to expel the stomach contents. The material that remains in the stomach undergoes chemical changes resulting in the formation of products that have a local effect on the mucosa of the stomach, and are absorbed and are capable of producing more or less marked general changes. The local changes produced in the stomach are very likely to cause a chronic inflammation of the mucosa, which, of course, would be responsible for the symptoms of a chronic gastritis. The general changes, due to absorption of chemicals from the stomach, may vary greatly in their effects and intensity. Secondary anaemia, which, as Hunter has suggested, may advance to pernicious anaemia, might occur. Of other possible conditions that might result from absorption of toxic stomach contents, I shall mention only those due to involvement of the nervous system.

We have for some time recognized severe cases of tetany due to stomach toxæmia. Examples are recorded by Cunningham

ham,<sup>4</sup> Robson,<sup>5</sup> Fleiner,<sup>6</sup> Carnegie,<sup>7</sup> Albu, and others. I have no doubt that nervous symptoms, less severe than tetany, can and do occur as a result of defective gastric drainage. I am of the opinion that the neurasthenia, so commonly associated with chronic dyspepsia, is not primarily dependent on some change in the nervous system, but is the result of the action of toxic products absorbed from the stomach. The theory that the nervous symptoms are primary, and that the dyspepsia is secondary and dependent on a primary nervous disease, is improbable. We must admit, however, that lesions in the nervous system are capable of producing stomach symptoms and definite gastric changes. Carion and Hallion<sup>8</sup> found that section of the vagus nerve is sufficient to produce complete atony and permanent dilatation of the stomach of the dog. Pawlow and Katschkowsky<sup>9</sup> have shown that cutting even both vagi nerves produces only a temporary disturbance of gastric movements. These and many other experiments, though not without value, are by no means convincing. Regarding them, Ewald<sup>10</sup> says, "Yet all these experimental stimulations in mammals have an indefinite and uncertain character; their success is not great, and by no means constant."

On the other hand, we have examples of tetany being relieved by drainage of the stomach; and we also have examples of the disappearance of nervous symptoms following drainage of the stomach for obstructions of the pylorus. I think we can safely say that it is probable that many times a neurasthenia is present as the result of absorption of toxic products from a stomach that does not drain properly.

Another symptom that is usually complained of by the patients suffering from gastric atony, inflammation, and defective drainage, is chronic constipation. The cause of the constipation might be due to the small amount of solid material that these patients usually pass into their intestines. Lohrisch<sup>11</sup> says that the absence of a sufficient quantity of dry residue in the intestines inhibits the growth of the intestinal flora and diminishes the production of indol, skatol, etc. The absence of

sufficient quantities of these stimulants of the bowel explains the constipation. I believe that the constipation in these cases is not accidental, or due to independent causes, but is the result of the defective drainage of the stomach. It was present in the three cases that I operated upon; and I have seen it present in other conditions that interfered with the drainage of the stomach. Gastro-enterostomy usually cures the constipation in these cases. Waterhouse<sup>12</sup> reports thirty-one cases of gastro-enterostomy on patients suffering from defective drainage of the stomach and chronic constipation. In all of these patients no constipation existed after the operation. Murphy and Ochsner<sup>13</sup> have not seen cases of constipation, following properly done gastro-enterostomies, unless produced by some definite local cause.

The recognition of defective drainage of the stomach due to chronic gastric atony and inflammation is made from the symptoms of chronic dyspepsia associated with neurasthenia and chronic constipation, and by excluding other stomach lesions that would produce similar symptoms. Obstruction of the pylorus, displacements, ulcer, tumors, and deformities usually present some symptom more or less characteristic of the condition present. I shall not go into the symptomatology or diagnosis, but shall be content with making a statement regarding the indication for operation in these cases. Any case of severe and long-standing dyspepsia that resists all generally advised methods of treatment, and that shows no permanent improvement after giving the stomach absolute rest for two weeks by rectal feeding, should be submitted to a laparotomy. This advice may be too radical to accept, but I believe, from the statements of Kemp, Cramer, and others advising operations on the stomach, that we shall lose little if we follow it.

If we can relieve these cases by gastro-enterostomy, as I have done in three instances, and if the good results following gastro-enterostomy for benign conditions prove to be permanent, we are justified in advising operation for all serious cases of chronic dyspepsia that will not yield to less radical treatment.

CASE I.—J. B., a miner, forty-eight years old, said that he had suffered from "stomach trouble" for twelve years. He complained at times of more or less pain in the epigastrium, soreness of the stomach, belching of gas, "sour stomach," loss of appetite part of the time, and constipation. He vomited occasionally, but had vomited less during the last three years than previously. His appetite was poor most of the time, although occasionally he would have a desire to eat. His illness, though very distressing, did not prevent his working part of the time.

Examination showed the patient to be anaemic and somewhat wasted, but not markedly emaciated. He was plainly neurasthenic, and had been so for ten years. Physical examination of the internal organs revealed nothing abnormal. The blood showed changes that corresponded to a moderate degree of secondary anaemia. The urine revealed nothing abnormal. Inflation of the stomach with acetic acid and sodium bicarbonate showed that the organ was considerably enlarged. The stomach contents contained free hydrochloric acid twice out of three examinations. Organic acids were found at each examination. The results of examinations by means of the tube and test meals revealed nothing that indicated a definite stenosis of the pylorus.

In the way of therapy, the patient had received only medical treatment. This consisted of the remedies prescribed by various physicians, and many patent medicines and remedies that he had been advised to take by his friends.

I washed out his stomach several times,—usually obtaining a considerable quantity of mucus at each washing,—and placed him on a liquid diet. He improved somewhat, and after six weeks resumed his work. He returned in one month and said that he was no better. After placing him on rectal feeding for two weeks, I did an exploratory laparotomy.

The stomach was much dilated and its walls were very thin. The pylorus was not indurated and did not seem narrowed. The gall-bladder and appendix appeared normal. There was no enlargement in the region of the pancreas. An anterior gastro-enterostomy was done with a Murphy button.

The patient recovered without difficulty, and at this time, two years after the operation, is well and strong. He eats the same food as do the other members of his family. He no longer

complains of "stomach trouble or nervousness," and is not constipated.

CASE II.—A merchant, fifty-two years of age, had suffered for fourteen years with "stomach trouble," neurasthenia, and constipation. His gastric symptoms did not differ materially from those of Case I. They did not correspond to a definite stenosis of the pylorus. In this case I was unable to determine, by the use of the stomach-tube and test meals, that the stomach did, or did not, empty itself with readiness. At times the ingesta would remain in the stomach for several hours, and again the organ would appear to empty itself in a very short time.

He had been a user of the stomach-tube for years, and would wash his stomach nearly every day, and sometimes three or four times a day.

I treated him in various ways for six months, while he watched the progress of Case I, and then operated upon him.

The stomach was considerably dilated with thinned walls. The pylorus seemed normal. No other abnormal changes were found. I did a posterior gastro-enterostomy by the suture method.

The result was as gratifying as in Case I. The gastric symptoms, neurasthenia, and constipation rapidly disappeared. At this time, eighteen months after the operation, the patient remains well.

CASE III.—A commercial traveller, thirty-eight years of age, had complained of chronic dyspepsia for seven years. Until three years ago he had been a heavy drinker of beer and whiskey. He had attributed his dyspepsia to the excessive use of alcoholics, and ceased using them three years ago. This gave him little or no relief.

He was typically neurasthenic and chronically constipated.

Examination revealed nothing that would point to anything but a chronic gastritis and a somewhat dilated stomach as the cause of his symptoms. As the patient had tried almost every known method of treatment, I advised operation without further delay.

Operation revealed a moderately dilated stomach. Its walls were not much thinner than normal. The pylorus showed no evidences of being constricted. The remainder of the abdominal organs revealed nothing abnormal. I did an anterior gastro-

enterostomy with a Murphy button, and practically closed the pylorus in the following manner: I flattened the pylorus and freshened the peritoneum covering its anterior surface by scraping with a knife. I then placed four catgut sutures in such a manner that their tying approximated the superior and inferior borders of the flattened pylorus. These sutures, without penetrating the mucosa, simply folded the pylorus on itself by bringing its superior and inferior borders together. I am quite satisfied that this method will close the pylorus temporarily, but I have no way of knowing the permanency of the closure. I closed the pylorus in this case because some had claimed that a gastro-enterostomy with a patent pylorus was apt to be followed by unpleasant symptoms, and perhaps closure of the gastro-enterostomy opening. I did not attempt to close the pylorus in the previous two cases; but in these the stomach walls seemed very atrophic, and it was improbable that the stomach regained much muscular power even after being perfectly drained.

The patient made a complete recovery, and at this time, five months after being operated upon, is in good health. His stomach no longer gives him trouble, and his "nervousness" and constipation have disappeared.

I have purposely omitted a discussion, in detail, of the symptoms, physical and chemical findings, and diagnosis in these cases. The diagnosis is made by exclusion, and, in my experience, has not always been correct. In one case in which I expected to find only a dilated and atonic and chronically inflamed stomach, I discovered a beginning carcinoma of the pylorus. I did a pylorectomy. This was eighteen months ago, and the patient still remains well. In two other cases a definite benign stenosis of the pylorus was found. In a fourth case, a cirrhosis of the stomach was present. A detailed report of this case was published in the March number of the *ANNALS OF SURGERY*, 1904.

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